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OBSERVATIONS ON SPAWNING AND EGG CAPSULE OF *MELONGENA BUCEPHALA* (LAMARCK) (MOLLUSCA: GASTROPODA) FROM THE KARACHI COAST

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No work has been done on the reproduction of *Melongena bucephala* from northern Arabian Sea (Karachi coast). This paper presents a description of spawning, egg capsule and macromorphology of eggs of *M. bucephala* collected from the rocky shore of Buleji (66°50' E; 24°4 'N) on May 28, 1986 at a tidal height of 0.5m. The individual was found in the act of spawning. The egg mass and development of *M. bucephala* from Karachi coast are also compared with the *Hemifusus ternatanus* from the Pacific Ocean (Amio, 1963).

The egg capsules of *M. bucephala* alongwith the spawning female were brought to the laboratory and maintained in a glass aquarium (50x30x30cms) containing fresh, filtered and aerated seawater from the sampling site. In laboratory, observations were made on the capsular morphology and dimensions. They were kept under continuous observations in Malacology laboratory of the Centre, at a room temperature of 30°C. The water was changed daily to avoid protozoan growth. Egg capsules were catalogued and preserved in 10% seawater formalin. The drawings were made from live material with the aid of camera lucida.

EGG CAPSULE AND EGGS

The capsules are laid in a linear fashion, standing errect side by side (Fig. 1A). Each capsule has a distinct base with which its glued to substratum but the capsules are laid so close to each other that the bases form a long narrow sheet from which capsules appear to arise. The egg cluster comprises of 24 capsules.

Freshly laid capsules are somewhat squarish, with short and nearly flat bases. Each capsule measures about 22mm in height; 3.5 mm in stalk height, and 17mm in width (Fig. 1B). The capsular walls are creamy, transluscent, tough and leathery, devoid of any ridges except the two small ones that emerge from the upper corner and extend downward to less than half the distance of the middle of the capsule. The exit-aperture, about 8mm long, is located on the top of the capsule. Approximately 5000 ova of about 320μm in diameter are clearly seen suspended randomly in an albuminous fluid throughout the capsule, concentrated mainly in the basal part of the capsule.

Studies on the reproduction of the members of family Busyconidae are very scarce. Natarajan (1957) described the egg capsules of *Hemifusus* sp from the Gulf of Mannar. Amio (1963) has described the breeding season, spawn and larval development of *H. ternatanus* from Japan. We describe herein for the first time the spawning and egg capsules of *Melongena bucephala* from the northern Arabian Sea. According to the classification proposed by Amio (1963), behaviour of ovulating female is expected to be of intermittent and linear transition type. The breeding season of *M. bucephala* at Karachi coast could not be documented, as the spawning was recorded only once. The

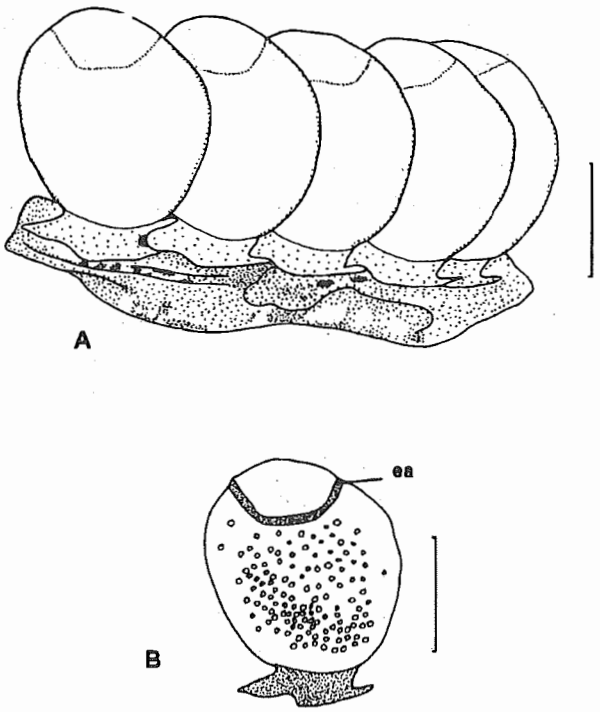

Fig. 1. *Melongena bucephala.* A. spawn mass, B. single capsule, (scale=1 cm); ea: exit aperture.

breeding season of *H. ternatanus*, which spawns in warmer months (May-July) is reported to be extended upto 3 months (Amio, 1963). The breeding season of *Hemifusus* sp. (Natarajan, 1957), which breeds in the colder months, extends at least for 6 months (October-March). The egg masses of *Melongena patula* were collected in August on the Pacific coast of Panama (D'Asaro, 1970). More data is needed to document the breeding season of *Melongena bucephala* from Pakistan.

The egg capsules are laid in a linear fashion and are adhered to the hard substrate by short stalks. The capsules of *M. bucephala* are of typical busycon shape and show a close resemblance to that of *H. ternatanus* from Japanese waters except that the latter produces slightly larger capsules enclosing larger ova. The capsular walls are creamish, translucent, tough and leathery. The exit aperture is oval and quite large measuring about 8mm across. The eggs are suspended randomly in the albuminous fluid throughout the capsule. Although no difference is noticed in the number of capsules of *M. bucephala* and *H. ternatus*, however, marked difference was noted in the diameter of eggs. The eggs of *Hemifusus* sp. A and sp. B, described from Gulf of Mannar (Natarajan, 1957) are comparatively larger than *M. bucephala* especially of sp.A, which are almost twice in diameter (700-750μm).

The course of development from eggs to veliger could not be studied since the egg did not develop under laboratory conditions. This may be due to the detachment of the capsules from their common substrate.

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